

# Information Technology

## Annual Report

**Mission Statement:** Serve the citizens of Wooster by diligently supporting all departments of city government in their use of information technology products and services.

## Areas of Service

### Tech Support

#### In-person

IT personnel visit the work area of the person requesting help. They assess the problem, apply corrective measures, and verify that the problem has been solved.

#### Network-based

IT personnel connect to the computer of the person requesting help using Dameware remote control/computer management software any PC on the city network. They assess the problem, apply corrective measures, and verify that the problem has been solved.

#### IM (Instant Message)

Web-based chat through GoogleTalk in Gmail. People frequently ask quick questions or request support via this convenient medium.

#### Phone

Many times a question or problem can be addressed by speaking with the person requesting help over the phone. Similar steps apply as with the other two types of support as far as assessing the problem, applying corrective measures, and verifying the results.

#### WITS (Wooster Information Tracking System)

Web-based application, created by the IT Division, facilitating the tracking of support requests, inventory of equipment, and reporting of support statistics.

#### Hours of Availability

The IT Division maintains a 10-hour per day, 5-day per week "on hand" support availability, as well as 7-day per week after hours support via Manager's cell phone.

### Systems Integration

#### Hardware and software systems installation & upgrade

Research the problem and short list a small set of solutions. Apply the solution within the city in a test environment, document the results, analyze results for an optimal solution, implement the solution and document key steps along with warnings regarding pitfalls.

#### Software application development

Analyze user requirements, propose solutions, and if solutions are acceptable to stakeholders then design the solution using Object Oriented Design principles. Implement the solution using a programming methodology.

### Training

#### New Hires

IT conducts individualized training for new hires, familiarizing them with the City's network resources, website, email, login/password procedures, and basic software programs.

#### Core Apps

IT conducts individual or group training, on-site or in the Training Room at City Hall, for the core software programs used by the City of Wooster, including the following:

*Google (Mail, Docs, Sites, Groups), Microsoft Word, Excel, PowerPoint*

#### Hosted Training

The Training Room in the IT Division is often utilized for web-based training, conference calls, or vendor on-site training. Examples of recent vendor conducted training are:

*Ifas, Inhance, T2 Flex, ECF, Sign Reflectivity webinar*

#### Conference Room setup

IT often sets up training to be conducted by others, in the IT Training Room, as well as the Administration and Finance Conference rooms. Such setup usually involves connecting computers, installing software, logging

onto conferencing websites, and dialing in to conference calls.

### **Testing**

Conduct testing for potential new hires and for in-house promotional purposes.

## **Web**

### **Internet**

Public website created & maintained by IT that serves as a means of information dissemination to the public.

### **Intranet**

Internal website created & maintained by IT that serves as a "bulletin board" amongst the City departments, allowing the posting of forms, documentation, and other relevant information.

### **Woobid**

Public website created & maintained by IT that facilitates disposal of unnecessary equipment by auction to the highest bidder.

### **Portal**

Internal web application server providing functionality used (currently) by the Police, Legal, Building Standards, Finance, Utilities, and Information Technology divisions.

### **ArInfo**

Web application server hosting the city's GIS offerings, available in public and internal versions.

### **Emergency Notification System**

Web-based application created by IT Division to allow authorized City personnel to send out emergency notifications to citizens who have subscribed via the City of Wooster website. Hosted on the Portal web app server.

## **Infrastructure**

### **Windows Domain**

All city personnel receive a Windows logon that enables access to different network resources based on their group memberships and the permissions configured for their account. IT creates and manages user accounts, permissions, and files associated with their logon (called Roaming Profiles) that are available at whichever City computer they sign onto.

### **Network Infrastructure**

IT configures and maintains 24 Switches, 2 Routers, 3 Firewalls in an effort to provide optimum network speed and reliability to City of Wooster computer users.

### **Wireless network infrastructure**

IT configures and maintains 2 wireless networks, one guest, one internal, in an effort to provide convenient mobile access to city data and the Internet.

### **Virtual Infrastructure**

Since 2007, the IT department has converted most physical servers to virtual machines, running on 2 VMware vSphere servers. Virtualization divorces a computer's operating system from dependence on the physical components of the computer by presenting a virtual set of hardware to the operating system. As far as Windows, for example, knows, it is still running on physical hardware and continues to function as it normally would. This technique allows for cost savings in actual physical server purchases, support contracts needed for physical servers, cooling and power consumption. Virtualization also allows for more efficient management of existing servers, and faster deployment of new ones.

Our VMware servers pool memory, processor and storage resources to allow optimal usage of physical resources on the VMware servers. This also makes available increased resources for each virtual machine, if needed.

### **Wiring closets**

Each department hosts a wiring closet containing the department's Cisco switch, connected to a battery backup, and network cable termination panel.

### **Server room**

IT maintains a server room at City Hall in which the fiber connections for each department connect to a

central switch. One VMware virtual server is housed in the server room, as are the remaining physical servers (except for 1 at Water Treatment Plant, 1 at Water Pollution Control Plant, and 7 at the Maintenance Garage). A backup server room is located at the Maintenance Garage. This location is connected by a separate fiber connection to City Hall, and houses a second Domain Controller (Midgard), two backup servers, a DataDomain backup storage array, a firewall for the backup internet connection, and the second VMware server.

### **Offsite backups**

Backups of all servers are created by 2 servers running the Bacula enterprise backup software and written to a DataDomain storage array. These devices are located in the backup server room at the Maintenance Garage. The most important servers are backed up nightly. Less critical servers are backed up weekly.

### **Fiber runs**

Each city department is connected to the network by fiber optic cable. The city owns all of its fiber runs, except for the connection to Fire Station 2 on Highland Avenue and a dedicated internet connection for Police Mobile Data Terminals. These two fiber connections are leased from Clear Picture.

### **Phone system**

Currently the city owns a Mitel phone system, supported by Mackay Communications.

IT performs certain administrative tasks such as updating extension & voice mailbox information, and most phone moves.

### **Cellular Infrastructure**

At present cellular service is purchased from Verizon. The following types of devices are deployed throughout the city departments: Smartphones, Push-to-talk, Standard, dedicated aircards

### **Security Planning & Testing**

No new hardware or software system is created or installed without evaluating security factors relevant to that system's operations, as well as how they will affect the security of systems already in place.

Securing the City's digital assets from Hackers (crackers ) and other undesirables.

Preventing malware infections on PCs and Servers, cleaning them when one does get through.

### **Software licensing**

IT tracks Windows Desktop and Server, Microsoft Office, Adobe Acrobat, and other software licensing to ensure our installed systems are within the number of licenses we own.

### **Hardware and software purchases**

When requested, IT makes recommendations and provides quotes for hardware & software purchases made by departments.

### **Utilities Instrumentation**

Since January 2011, IT has served as the primary instrumentation support resource for the city's Water Treatment and Water Pollution Control plants. Services provided range from troubleshooting equipment and processes not working as expected, to changing existing automation programming to improve functionality, to integrating new automation equipment such as Programmable Logic Controllers, and electric motor drives. IT has also become deeply involved with the plant's radio telemetry networks, and web-based operator interface SCADA systems.

## Metrics

### Equipment Uptime (Servers, Switches, Printers)

2008  
Average: 99.738%

2009  
Average: 97.785%

2010  
Average: 99.972%

2011  
Average: 99.913%

2012  
Average: 99.978%

### Support Requests Completed

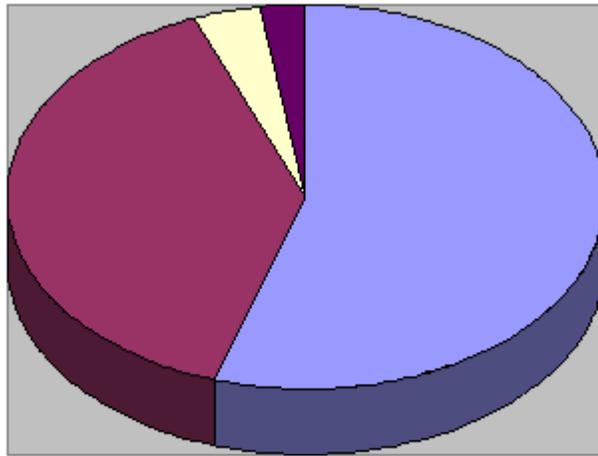
2009  
238 Information requests completed  
2137 work requests completed

2010  
17 Information requests completed  
955 work requests completed

2011  
30 Information requests completed  
1003 work requests completed

2012  
25 Information requests completed  
890 work requests completed

## Training



■ Internal ■ External ■ Custom ■ Testing ■ Cancelled

**Internal trainings are instructed in the city's training room by either the IT staff or by another city employee.**



**External trainings are instructed in the city's training room by either an outside vendor coming here or via a webcast.**



**Custom trainings are internal individualized trainings that occur off-site and in the city's training room.**

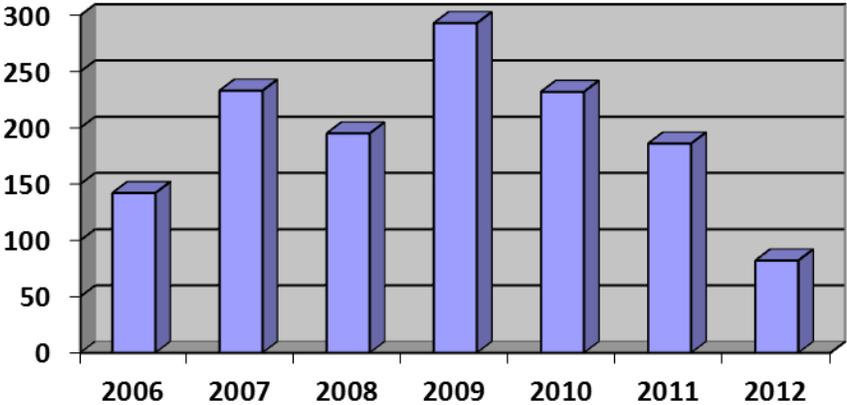


**Testing is for potential new hires or for promotional purposes within the city.**

**There were 82 trainings this year in the following categories:**

New Hires	14
Inhance	1
Webinar	8
Application Review	4
Ifas	27
Off-Site Individualized	3
ICIS	6
Geoblades	14
Bldg Code On-line	2
Fire Program	3
<b>Total</b>	<b>82</b>

**1,363 trainees have completed classes**



## 2012 Projects

### **SAN Replacement**

An iSCSI Storage Area Network is the backbone of our virtual infrastructure. Replaced out of support Lefthand units with two Equallogic PS4100E models, one installed at the City Hall Server Room, and one at the backup server room at the PPM Garage. Replication occurs between the two on a frequent basis to allow for disaster recovery.

### **VMware Server Replacement**

The City's virtual infrastructure runs on VMware. Replaced six Aberdeen servers running VMware ESX 3.5 with two HP DL360p G8 servers, one installed at the City Hall Server Room, and one at the backup server room at the PPM Garage. The new servers run VMware vSphere 5.1, and all existing virtual machines were upgraded to the latest VMware hardware versions during the migration to the new servers.

### **Linux Server Upgrades**

All Ubuntu Linux servers (over half of our total servers at the City) were upgraded to the latest long term support version. Testing was conducted before any production machines were upgraded, and the upgrades were performed during scheduled downtime over a period of weeks.

### **Quarterly Image Backups**

A process was instituted in 2012 of creating quarterly image backups of key desktop computers in each City division, using the open source FOG image backup system. This allows for quicker recovery if a computer experiences hardware or operating system breakage, as well as increasing our broader disaster recovery protection.

### **City GIS**

The City of Wooster's Geographic Information System stores survey, map, and public infrastructure data in an electronic database, and presents a highly-usable web-based interface for reference and analysis of this information. Working with our vendor, EMH&T, City IT helped to install, configure, and migrate the City GIS system to the widely-used ESRI ArcGIS platform.

### **GeoBlades GIS Application**

Working with the vendor, GTG, City IT helped to install, and configure the GeoBlades application for Wooster Police. This app uses the new City GIS system to help Police personnel view and analyze geographic data relating to Police service calls.

### **Christmas Run WiFi**

Expanding on the City of Wooster Free WiFi launched at Freedlander Pool and Park in 2011, wireless internet access was installed at Christmas Run Pool.

### **Knights Field WiFi**

Expanding on the City of Wooster Free WiFi launched at Freedlander Pool and Park in 2011, wireless internet access was installed at Knights Field Spraypark.

### **Human Resources Shared Drive**

Working with Human Resources staff, City IT helped to reorganize the folder structure on the primary file share in an effort to institute a more structured storage schema.

### **Human Resources Seasonal Employment Process**

Working with Human Resources staff, City IT helped to analyze and reorganize the hiring process for seasonal employees. Options for submitting applications electronically were expanded as well.

### **Updated Organizational Chart**

The organizational chart was redesigned and updated. A generalized version was also produced for the public website.

### **Public Properties Maintenance Cost Accounting**

A new cost accounting methodology was introduced for the Public Properties Maintenance division, and City IT created spreadsheets and linkages, entered the initial round of data, updated the data at year end, and trained the PPM Supervisors to maintain the data.

### **Police MDTs to Verizon**

The Mobile Data Terminals (laptops) used in Police cruisers were migrated to Verizon Wireless for their encrypted connection to the Wayne County Justice Center systems, as well as upgraded to 4G connections when that technology became available in the Wooster area.

### **Police Dedicated Internet Connection**

Working with Clear Picture and Verizon Wireless, City IT planned and installed a dedicated fiber internet connection for use by Police MDTs. A City of Wooster router at the Wayne County Justice Center servers as the endpoint for an encrypted connection between Wooster Police MDTs and systems at the Justice Center.

### **Water Pollution Control Plant Effluent Pumps**

Automated operations of the Effluent Pumps at the Water Pollution Control Plant were reprogrammed by City IT to better utilize the variable speed capabilities of the pumps to dynamically adjust to changing flow amounts exiting the plant when treatment is complete.

### **Water Pollution Control Plant New Motor Control Center**

Storm conditions produce greatly increased incoming flows at the Water Pollution Control Plant. A set of pumps are designated storm pumps for use during increased flows. A new motor control center was installed to power these pumps. City IT programmed the pumps to, like the Effluent pumps, take advantage of the variable speed capabilities of these pumps during changing flow conditions.

### **Water Pollution Control Plant SFD Process**

During treatment, sewage is moved between several tanks designed to accomplish various aspects of the breakdown process. This "interchange" operation was reprogrammed by City IT to make better use of Programmable Logic Controllers (PLC) at the Water Pollution Control Plant.

### **Water Treatment Plant Washwater Automation**

Each morning a process of cleaning filters in one of the four water storage chambers is carried out. Each step in this "washwater" process was linked together in a PLC program to allow automatic synchronization and execution of the entire operation.

### **Water Treatment Plant Booster Station and Tower Polling**

The various booster stations and water towers of the City of Wooster's drinking water system are linked to the main plant via a radio connection. Each remote location is regularly polled by the main PLC at the Water Treatment Plant. This programming of this polling process was redesigned to provide better consistency.

### **Public Website Visual Refresh**

City of Wooster's public website (<http://www.woosteroh.com>) was given a visual refresh via a redesigned visual layout, reorganized menu system, and new photos and graphics.

### **Public Website Code Refresh**

City of Wooster's public website (<http://www.woosteroh.com>) was updated "under the hood" as well via enhanced use of PHP, optimization of programming techniques, and studied tweaks to increase page load speed.

### **Kiosk Computers**

Standalone computers, with locked down user interfaces, were installed in the City Hall and Community Center lobbies. These kiosks are intended to allow the general public to browse to specific websites such as the City of Wooster public website, Wooster City Services online utility bill pay, City of Wooster GIS, etc.

### **New Antivirus/Update Server**

A new Windows virtual machine was installed to serve as a "utility" server hosting a variety of smaller, specific programs. This server controls the City's antivirus, and software update functions, among others.

### **Directory Web App**

When installing the new "utility" server, a new web-based directory application was configured also. This app allows City staffers to lookup names, phone numbers, and other information of fellow staffers via browsing to an internal website.

### **Fire Accountability App**

The Fire division acquired a new accountability system, which features a computer-based component in addition to a physical tag system. This allows the command at an emergency response site to better coordinate the whereabouts and task assignments of all responders, whether Wooster staffers or responding reciprocal aid units. City IT helped in the evaluation, configuration, and rollout of this system.

### **Firehouse Web App**

The main reporting software used by the Wooster Fire division is called Firehouse. In 2012, a web-based, secure version of the program was deployed to allow Fire personnel to access the reporting software anywhere they have an internet connection. This will open possibilities for filing reports while still at the scene, or enroute to or from.

### **Firehouse EMS Code Changes**

By 12/31/2012, all Fire departments in Ohio had to switch to a new EMS incident report coding system that unifies codes at a national level. This required an archiving of old EMS reports, an update of the Firehouse EMS database, and a familiarization period for Fire staffers to learn the new reporting. City IT performed the upgrade in mid-December, and helped work out bugs between the old and new reporting methods.

### **Public Information Website**

Projects being put up for bid are now posted on a website linked from the City of Wooster public website. Interested parties can register, and download all available information relating to RFP and bidding for any particular project.

### **Multi-Function Printers**

The Police, Fire, and Recreation divisions each replaced aging copiers/printers with multi-function devices that allow for copying, printing, scanning, and faxing from one networked device.

### **Fillable Forms**

In an effort to make documents more electronically accessible, most forms on the City public and intranet websites were converted to "fillable form" PDF documents that allow information to be typed on the computer, saved to the computer, and printed or emailed.

### **Accounts Receivable Lockbox Images**

Wooster City Services utility began receiving scanned images of utility bill payment receipts electronically from the bank. City IT configured, tested, and automated the image file download and storing routine, and will be adding a web-based viewing and searching interface in 2013.

### **Finance Archival Scanning**

The Finance division engaged a vendor for scanning and storage of older paper records that have not yet reached the end of their records retention period. City IT helped to evaluate and coordinate the setup and initial document retrieval.

### **Automated Meter Reading Mailer**

City of Wooster Water and Accounts Receivable units are in the process of replacing automated meters, that are reaching end of life, throughout residential and commercial buildings. City IT created a "mass mailer" program that will allow Accounts Receivable to send out letters to building owners informing them of the meter replacements, as well as scheduling the visit from the technician.

### **Technicians Scheduling**

City of Wooster has been utilizing automated water meters for a decade or more. These meters, installed on customer premises, are reaching the end of expected life and beginning to fail. The Water and Accounts Receivable departments have embarked on a multi-year project to replace these meters. City IT created a scheduling web app to allow Accounts Receivable personnel to coordinate and schedule meter installations, removals, shutoffs, etc.

### **Utility Billing File Upload**

Each month a routine is run on the Utility billing server to generate bills. The file produced from this is sent to a vendor to be printed on paper and mailed. City IT automated the bill file upload portion of the process.

### **Web App Server Interface Refresh**

The City of Wooster web app server, used by many departments internally for a variety of web apps, received an interface update on the initial navigation screen one sees after login.